RAYNAUD’S SYNDROME
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1. Raynaud’s Syndrome

Definition: Episodic digital vasoconstriction (ischaemia) followed by reflex vasodilatation producing the characteristic tri-color response of white (vasoconstriction), blue (sluggish flow), and red (reflex hyperaemia).

- Attacks are precipitated by cold or emotional stress
- The most common vasospastic condition (prevalence ± 10%)
  (others: erythromelalgia, acrocyanosis, livido reticularis, reflex sympathetic dystrophy)
- > 80% Females
- Classified as:
  - Primary (idiopathic: no identifiable cause/ associated disorder
  - Secondary: positive etiological agent / associated with another disorder

2. Causes of vasospasm in Raynaud’s Syndrome

- Changed → Sympathetic nervous activity and reactivity:
  - Altered and increased $\alpha + \beta$ receptor sensitivity
- Altered → Endothelial function:
  - Abnormal levels of chemicals derived from vascular endothelium
    eg: ↓ NO, ↓ PGI$_2$ (vasodilator)
    $\uparrow$ endothelin (vasoconstrictor)
- Changes in blood constituents
  - $\uparrow$ platelet aggregation
  - $\uparrow$ leucocyte activation, etc

3. Primary Raynaud’s

- No identifiable cause
- Reversible, vasospastic condition
- No obstructive arterial lesions
- Digital blood pressure normal between attacks
- Ulceration / gangrene rare

4. Secondary Raynaud’s

- Associated with a variety of underlying disorders / causative agents
- May have structural (irreversible) arterial lesions
- Digital blood pressure $\downarrow$
- Ulceration and gangrene more common
4.1. Causes of Secondary Raynaud’s
- Connective tissue disease:
  - Scleroderma, SLE, RA, etc.
  - CREST syndrome (Calcinosis, Raynauds, Esophageal dismotility, Sclerodactyly, Telangiectasis)
- Arterial occlusive disease: atherosclerosis, Buergers disease, T.O.S.
- Occupational trauma: Vibrating tools, chronic cold exposure, etc
- Neurological disease: carpal tunnel syndrome, RSD
- Blood dyscrasia: hyperviscosity syndrome, cold agglutinins, myeloproliferative disease
- Drugs, toxins: Ergot preparations, βblockers, cytotoxins
- Miscellaneous: hypothyroidism, malignancy, etc

5. Diagnosis:
5.1. History:
- Typical clinical features
- Symptoms of underlying CTD
- Occupation
- Drugs

5.2. Clinical examination:
- Digits
- Vascular examination
- T.O.S
- Systemic – features of CTD
- Other systemic disease

5.2. Special investigations:
- Blood tests
- Vascular laboratory
- Radiology
- Nail fold capillary microscopy

6. Management
6.1. General Measures:
- Avoid cold exposure
  - Environment
  - Gloves, socks
  - Insulated boots
- Withdraw causative agents/drugs
- Stop smoking
- Occupational adjustments
- Counselling
6.2. **Drugs:**
- Ca++ channel blockers: Nifedipine
- Pentoxifylline
- PGE1 / PGI2: (prostacycline)
  - Potent vasodilator
  - For severe symptoms: ulceration, gangrene, pain
  - Special precautions
- Treatment of underlying CAD as indicated

6.2. **Surgery:**
- Only indicated in advanced / resistant cases. Limited effect in 2° Raynauds
- Upper limb – thoracic endoscopic sympathectomy
  → removal of T2T3 ganglia
- Lower limbs – lumbar sympathectomy
  → removal of L2L3L4 ganglia
- High recurrence rate of symptoms after thoracic sympathectomy
- Lumbar sympathectomy for Raynaud’s disease yields better results